CPM Project

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Project Goal

Improve sample recording and reporting process in the Milk Laboratory to reduce technician time involved 70% by September, 1998. In the milk laboratory expensive technician time is spent manually recording sample information on worksheets, then entering the same information into the computer along with tests results for reporting purposes. Laboratory technician time would be better spent performing tests that would fulfill the agency's mission of protecting public health.

Project Statement

In 1984 a Dairy Information Management System (DIMS) was created for the South Carolina Department of Health and Environmental Control (SCDHEC) Dairy Division. The format was based on the recording and reporting process utilized in the milk laboratory at that time. A clerical position was devoted full time to perform this type of work.

Currently the milk laboratory has no clerical position. Technicians have assumed the workload in addition to testing responsibilities. The process consist of manually recording information found on the sample containers, including producer number, and the date, time, and temperature collected. Then the producer number is looked up in a list of 1000 producers. The corresponding producer name and computer number are recorded on the worksheet. When all testing is completed, sample information and test results are entered in the computer. From there reports are printed, sorted and mailed. The system causes delays in reporting information and limits access to the information.

Reducing time spent on reports would allow the employees of the Dairy Division earlier access to test information. They would be able to plan their work schedule and follow up on violations much sooner than the current system allows. Dairy farmers and plants would also receive results in a more timely manner.

Cause Analysis

Why are we recording sample information and reporting results this way? At the present time we do not have a more efficient way.

Why do we not have a more efficient way? We are limited by our current computer program which was created in 1984. Our current procedure is an extensive modification of the original procedure. However, we have had to make modifications within the limits of the program.

Why is that a limitation? The format and language of the program is primitive compared to current programs and language. The old program is limited in the way the data banks can be used..

Why do we have an old program? No money has been allocated for a new program.

Why hasn't money been allocated for a new computer program? The management at SCDHEC did not think it was important to allocate money for a new computer program for the laboratory.

We can come to the conclusion that the procedures for recording information and reporting results in the milk laboratory cannot undergo any further changes because of the

computer program. How can we show that we are spending too much technician time on this task? We can begin by documenting how much time is actually spent on recording information and reporting results.

Data Collection

Our data collection goal is to establish how much time is spent on recording information and reporting results. To accomplish this each job is broken down into smaller tasks. The amount of time spent on each tasks is determined by actually timing technicians performing the task (Appendix 1, 2).

After determining when each task begins and ends, actual time spent on the task is observed and recorded. The times are added to arrive at the total time for the job. Time per sample can be determined by dividing total time by the number of samples involved. Work time is recorded in work time units (WTU's). A WTU equals one minute.

We can continue to improve measurement consistency by timing different technicians since each person works at a different speed. We can also time different batches of samples since each batch presents different challenges.

Solutions to the Problem

Technician time spent recording and reporting can be reduced by:

1. Having a non-technical or clerical position to perform the tasks. The amount of work would occupy 25% of a full time employees time. The milk laboratory has tried sharing a position with another section. This has not been successful because the people

were not familiar with the work in the milk section. As a result unacceptable reports were sent. And because the people were not part of the section, they seemed reluctant to do the work and would not show up at the appointed times. The amount of work does not justify an additional full time employee for the milk laboratory.

2. Changing procedures to reduce time spent on the tasks. This solution would be the preferred route. The Bureau of Laboratories has recently awarded a contract to a company to write a laboratory information management system (LIMS) for the entire bureau. The new generation of software will enable the milk section to change recording and reporting procedures and reduce technician time spent on those tasks. Currently the time spent on recording and reporting averages four minutes per sample. The estimated amount of time per sample for recording and reporting with the new procedure is one minute.

Planning and Intervention

While the computer program will be written by the software company, all employees in the milk laboratory will be involved in planning and designing the new procedures. Everyone has an opportunity for input using brainstorming sessions. Using a team approach will maximize the potential of the program because each person has a unique perspective.

The resources required are a computer program and computer programmers to write the program. Additional computers placed in work areas of the laboratory will be needed. The cost of the program and additional computers are part of the original

contract with the software company. The projected date for installation and implementation of LIMS is the first or second quarter of 1999. See appendix 3 for a time line. Time frames will be adjusted as needed.

At the time of installation, employees will receive training and have ample opportunity to practice with the new program before implementation. Additional changes in procedures are anticipated as the new program is used. While problems with implementation are anticipated, we are unable to predict what those could be. When problems are encountered, this area of laboratory procedures are flexible enough to accommodate the needed changes.

Evaluation

The efficiency of the program and procedures can be evaluated by retiming the jobs and tasks involved in the changes. With modifications the same format can be used in the process. A direct comparison then can be made between the new procedures and those used prior to implementation of the program.

Appendix 1

Determination of WTU's

Job: Recording sample information

Task	Analyst	Batch	Date	Time	Total	Av/sample
Record info on samples						
Record producer info						
Tracking new producers						
Assign new numbers						

Appendix 2

Determination of WTU's

Job: Reporting results

Task	Analyst	Batch	Date	Time	Total	Av/sample
Check worksheets						
Enter data						
Proofing						
Corrections						
Make floppy						
Copy worksheets						
Mailing						

Appendix 3

LIMS Project Time line*

January/February, 1998	Milk/Food Lab writes specifications for LIMS
March 2-5, 1998	Meet with Neometrics about specifications
April, 1998	Proof software specifications
May-July, 1998	Any corrections or additions to specifications
April, 1999	Installation of LIMS
May, 1999	Implementation of LIMS

*Dates subject to change